

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (canceled)
2. (currently amended) An isolated and purified DNA fragment, which comprises the nucleotide sequence given in SEQ ID NO: 14, or a sequence ~~showing at least 84 % homology to said sequence~~ that hybridizes under stringent conditions to a hybridization probe the nucleotide sequence of which consists of SEQ ID NO: 14 or the complement of SEQ ID NO: 14, wherein said DNA fragment has a function to encode polypeptides necessary to produce aclacinomycins.
3. (previously presented) A recombinant DNA, which comprises said DNA fragment of claim 2, cloned in a plasmid replicating in *Streptomyces* or in *E. coli*.
4. (withdrawn) The recombinant DNA according to claim 3, which is the plasmid pSgs4 deposited in *S. lividans* strain TK24/pSgs4 with the accession number DSM 12998.

5. (withdrawn) The recombinant DNA according to claim 3, which is the plasmid pSgc5 deposited in *E. coli* strain XLIBlueMRF'/pSgc5 with the accession number DSM 12999.

6-8. (canceled)

9. (currently amended) A process for increasing aclacinomycin production in a bacterial host, comprising transferring the DNA fragment of claim 2 into a *Streptomyces* host producing aclacinomycins or aklavinone intermediates thereof, cultivating the recombinant strain obtained, and isolating the aclacinomycins produced.

10. (previously presented) The process according to claim 9, wherein the *Streptomyces* host is a *Streptomyces galilaeus* host.

11. (previously presented) The process according to claim 10, wherein the *Streptomyces galilaeus* host is a mutant strain derived from *S. galilaeus* ATCC 31615.

12. (previously presented) A process for producing polyketides, comprising transferring the DNA fragment of claim 2 into a *Streptomyces* host producing polyketide compounds, cultivating the recombinant strain obtained, and isolating the compounds produced.

13. (currently amended) A process for producing ~~anthraeycline metabolites~~ polyketides, comprising transferring the DNA fragment according to claim 2 into a *Streptomyces peucetius* host producing anthracyclines or aklavinone intermediates thereof, cultivating the recombinant strain obtained, and isolating the compounds produced.

14. (currently amended) The process according to claim 9, wherein the DNA fragment comprises gene sequences encoding ~~includes~~ an activator, a dehydratase, an oxidoreductase, a DTP-glucose 4,6-dehydratase, a glycosyl transferase, an isomerase, an aklaviketone reductase, ~~a polyketide assembler~~, a cyclase, an aminomethylase, a glucose- 1-phosphate thymidyl transferase, and an aminotransferase.

15. (currently amended) The process according to claim 12, wherein the DNA fragment comprises gene sequences encoding ~~includes~~ an activator, a dehydratase, an oxidoreductase, a DTP-glucose 4,6-dehydratase, a glycosyl transferase, an isomerase, an aklaviketone reductase, ~~a polyketide assembler~~, a cyclase, an aminomethylase, a glucose- 1-phosphate thymidyl transferase, and an aminotransferase.

16. (withdrawn) An isolated polynucleotide comprising a nucleic acid sequence selected from the group consisting of the nucleotide sequence included in the plasmid pSgs4 deposited in *S. lividans* strain TK24/pSgs4 with the accession number DSM 12998 and the nucleotide sequence included in the

Application No. 09/830,994  
Reply dated November 12, 2004  
Response to Office Action dated August 11, 2004

plasmid pSgc5 deposited in *E. coli* strain XL1BlueMRF'/pSgc5 with the accession number DSM 12999.

17. (new) The DNA fragment of claim 2, wherein said stringent conditions are at 65°C in a low salt concentration.